

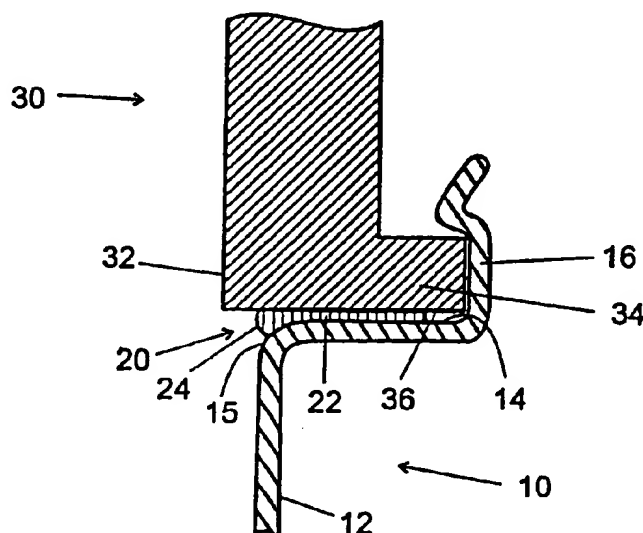


(86) Date de dépôt PCT/PCT Filing Date: 2000/01/25
(87) Date publication PCT/PCT Publication Date: 2000/07/27
(85) Entrée phase nationale/National Entry: 2001/06/13
(86) N° demande PCT/PCT Application No.: EP 00/00536
(87) N° publication PCT/PCT Publication No.: WO 00/43644
(30) Priorité/Priority: 1999/01/25 (199 02 817.6) DE

(51) Cl.Int.⁷/Int.Cl.⁷ F01M 11/00, F16J 15/14
(71) Demandeur/Applicant:
LOCTITE DEUTSCHLAND GMBH, DE
(72) Inventeurs/Inventors:
SCHMATZ, THOMAS MARTIN, DE;
RITTER, KARL-HEINZ, DE
(74) Agent: KIRBY EADES GALE BAKER

(54) Titre : PROCÉDE POUR MONTER LA CUVETTE A HUILE SUR UN BLOC MOTEUR D'UN MOTEUR A COMBUSTION INTERNE, MOTEUR A COMBUSTION INTERNE SUR LEQUEL LA CUVETTE A HUILE EST FIXEE AU BLOC MOTEUR SELON CE PROCÉDE, ET ASSEMBLAGES PAR BRIDES REALISES SELON LEDIT PROCÉDE

(54) Title: METHOD FOR MOUNTING THE OIL PAN ON AN ENGINE BLOCK OF AN INTERNAL COMBUSTION ENGINE, INTERNAL COMBUSTION ENGINE IN WHICH THE OIL PAN IS FASTENED TO THE ENGINE BLOCK ACCORDING TO SAID METHOD, AND FLANGE CONNECTIONS PRODUCED ACCORDING TO THE INVENTIVE METHOD



(57) Abrégé/Abstract:

In order to mount the oil pan (10) on the engine block (30) of an internal combustion engine, a sealing element is produced between the engine block (30) and the oil pan (10) using a hardenable composition (20). When in a hardened state, the adhesion of the composition (20) is sufficiently large enough to hold the oil pan (10) to the engine block (30). The adhesion should equal at least 0.5 N/mm², in particular, greater than 0.8 N/mm². The hardenable composition (20) can be comprised of a silicon material. The oil pan (10) can be fixed to the engine block (30) at least during the hardening of the composition (20). To this end, the edge of the oil pan is constructively designed such that an independent fixation results when joining the oil pan (10) to the engine block (30).

BEST AVAILABLE COPY



19-01-2001

EP 000000536

PCT/EP00/00536
Loctite Deutschland GmbH

January 19, 2001
32814-PCT

Process for attaching the oil sump to an engine block of a combustion engine, combustion engine with which the oil sump is attached to the engine block in accordance with that process, and flange connections which are made in accordance with that process

Description

The invention relates to a process for attaching the oil sump to an engine block of a combustion engine, a seal being made between a first sealing surface on the oil sump and a second sealing surface on the engine block, for which the curable
5 composition is applied to one or to both sealing surfaces. The invention further relates to a combustion engine with an engine block and an oil sump attached thereto, a first sealing surface being present on the oil sump and a second sealing surface on the engine block and between which is a curable
10 composition, and in general flange connections with two flange elements between which a seal is made with a curable composition.

Such a process and such a combustion engine and, resp., flange
15 connection are known from PATENT ABSTRACTS OF JAPAN, Vol. 007, No. 275 (M-261) (= JP 58152151 A), the actual attachment of the oil sump here being in conventional manner by means of threaded bolts.

20 A combustion engine is known from DE-A-41 03 685 with which the oil sump is connected to the engine block by means of a bonding agent having permanent elasticity when cured. An adapter is provided as a stable preform between the engine block and the oil sump and the adapter has a vertical stay
25 supporting the bonding agent to the inside of the engine. The structure of oil sump, bonding agent and preform is after

MODIFIED PAGE

BEST AVAILABLE COPY

Process for attaching the oil sump to an engine block of a combustion engine, combustion engine with which the oil sump is attached to the engine block in accordance with that process, and flange connections which are made in accordance with that process

ABSTRACT

For attaching the oil sump (10) to the engine block (30) of a combustion engine, a seal is made between the engine block (30) and the oil sump (10) by means of a curable composition (20). The adhesion of the composition (20) when cured is sufficient to secure the oil sump (10) to the engine block (30). The adhesion should be at least 0.5 N/mm^2 , especially more than 0.8 N/mm^2 . The curable composition (20) can be a silicone composition. The oil sump (10) can be fixed to the engine block (30) at least during the curing of the composition (20). To this end, the edge of the oil sump can be designed such that a self-fixing takes place when the oil sump (10) is joined to the engine block (30).

(Fig. 1).

BEST AVAILABLE COPY